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# Impact of Malpractice Reforms on the Supply of Physician Services

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EBATES ABOUT MEDICAL MALpractice have recurring themes, with tort reformers emphasizing the threat that liability crises pose to the cost and availability of medical services and tort defenders emphasizing the importance of liability to medical quality.12 Effects on access to health care are of particular concern during "malpractice crises," when rising liability insurance premiums and uncertain coverage are said to induce physicians to avoid high-risk patients or procedures, relocate to other communities, or leave practice altogether. Even between such crises, however, malpractice climate remains one of many factors determining how many physicians enter the medical profession, what specialties they choose, and where they practice.3

We investigated whether and how liability pressure affects long-term trends in physician supply from state to state. We used data from the American Medical Association's Physician MasterFile on the number of physicians in active practice in each state for each year from 1985 through 2001. We modeled the number of physicians in a state at a point in time as a function of state fixed effects, time fixed effects, timevarying state characteristics, and the presence or absence of certain malpractice reforms. We divided liabilityreducing malpractice reforms into 2 types: reforms that directly reduce ex-

See also pp 2609 and 2660.

**Context** Proponents of restrictions on malpractice lawsuits claim that tort reform will improve access to medical care.

**Objective** To estimate the effects of changes in state malpractice law on the supply of physicians.

**Design** Differences-in-differences regression analysis that matched data on the number of physicians in each state between 1985 and 2001 from the American Medical Association's Physician Masterfile with data on state tort laws and state demographic, political, population, and health care market characteristics.

**Main Outcome Measure** Effect on physician supply of "direct" malpractice reforms that reduce the size of awards (eg, caps on damages).

**Results** The adoption of "direct" malpractice reforms led to greater growth in the overall supply of physicians. Three years after adoption, direct reforms increased physician supply by 3.3%, controlling for fixed differences across states, population, states' health care market and political characteristics, and other differences in malpractice law. Direct reforms had a larger effect on the supply of nongroup vs group physicians, on the supply of most (but not all) specialties with high malpractice insurance premiums, on states with high levels of managed care, and on supply through retirements and entries than through the propensity of physicians to move between states. Direct reforms had similar effects on less experienced and more experienced physicians.

**Conclusion** Tort reform increased physician supply. Further research is needed to determine whether reform-induced increases in physician supply benefited patients.

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pected malpractice awards and reforms that reduce awards only indirectly. We estimated the simple average effect of liability-reducing reforms on physician supply. We also estimated how the effect of reforms varies over time, across different health care markets, and for different types of physi-

#### **METHODS**

cians.

We modeled the determinants of the supply of physician services in the United States from 1985 to 2001. In each state s in year t, we measured supply by the total number of physicians in the state and by the number of physicians with 20 years or more vs less than 20 years of experience (defined as the difference between the current year and year of graduation from medical

school). We began our analysis in 1985, and we omitted 1990 from our analysis because physician-level data were unavailable for years before 1985 and for 1990. In addition, we modeled the decisions of 2 subpopulations of physicians whose supply decisions are likely to be particularly sensitive to malpractice pressure. First, we measured the supply of physicians in nongroup practice settings because these physicians may bear a greater share of at least the financial burden of malpractice

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pressure. The nongroup designation excluded physicians who reported that they were members of a group, were members of a health maintenance organization, were hospital-based, or were in public-sector practice but included physicians who reported that they were members of a partnership. Second, we measured the supply of physicians in 5 "high-risk" specialties: obstetrics/ gynecology, surgery (including surgical subspecialties), anesthesiology, emergency medicine, and radiology. These specialties paid the highest reported malpractice premiums in 1994, a year in the middle of our study period for which comprehensive premium data by specialty were available.4

We modeled the supply of care as a function of state and year fixed effects  $(\alpha_s$  and  $\theta_t$ ), the natural log of the population of state s in year t  $(P_{st})$ , the political parties of the governor and each house of the legislature of state s in year t  $(W_{st})$ , the number of residency programs and the number of residents per capita in state s in year t  $(R_{Ist}$  and  $R_{2st}$ , respectively, with  $R_{st}$  defined as the 2-element vector containing  $R_{Ist}$  and  $R_{2st}$ ), managed care enrollment per capita in state s at year t  $(M_{st})$ , and state malpractice laws  $(L_{st})$ .

Our models identified the effect of state malpractice laws by comparing the change in physician supply in states that altered their laws between 1986 and 2001 to the change in supply in states that did not. As in previous work by one of us (D.P.K.), this involved using differences-in-differences between reforming and nonreforming states to identify effects.

Our differences-in-differences approach has advantages and disadvantages. By identifying the effect of interest based only on states that changed their laws between 1986 and 2001, we can control completely for fixed differences between states and for national trends that affect all states, as well as for the time-varying characteristics of states affecting physician supply that are most likely to be correlated with states' propensity to adopt legal reforms. How-

Table 1. Legal Reforms Used in the Analysis\* Potential Impact Reform Description of Reform on Liability Caps on damage awards Either noneconomic (pain and suffering) or Direct total damages payable are capped at a statutorily specified dollar amount Abolition of punitive Medical malpractice defendants are not liable Direct damages for punitive damages under any No mandatory prejudgment Interest on either noneconomic or total Direct interest damages accruing from either the date of the injury or the date of filing of the lawsuit is not mandatory Collateral source rule reform Total damages payable in a malpractice suit Direct are subject to reduction by all or part of the dollar value of collateral source payments to the plaintiff Caps on contingency fees The proportion of an award that a plaintiff can Indirect contractually agree to pay an attorney is capped at a statutorily specified level Mandatory periodic Part or all of damages must be disbursed in Indirect payments the form of an annuity that pays out over Joint-and-several liability Joint and several liability is abolished for Indirect reform noneconomic or total damages, either for all claims or for claims in which defendants did not act in concert Patient compensation fund Physicians receive government-administered Indirect excess malpractice liability insurance. generally financed through a tax on malpractice insurance premiums. Statute of limitations reform Plaintiffs are precluded from making a claim Indirect more than 3 y after the underlying injury or act, without regard to the discoverability of the injury (except for injuries caused by foreign objects or injuries to minors and incompetent patients)

\*Source: Kessler and McClellan.\*1

ever, we cannot assess the impact of reforms adopted in 1985 or earlier. For example, the effect of a reform adopted in 1985 (that remained in force through 2001) would be indistinguishable from other fixed differences between states.

We categorized state malpractice laws according to the presence of 2 types of reforms: reforms that directly reduce expected malpractice awards and reforms that reduce awards only indirectly (TABLE 1). "Direct" reforms include caps on damage awards, abolition of punitive damages, abolition of mandatory prejudgment interest, and collateral source rule reforms. "Indirect" reforms include caps on attorney contingency fees, mandatory periodic payment of future damages awards, joint-and-several liability reforms, statute of limitations reforms, and patient compensation funds. We chose to group reforms into these 2 categories

because several studies in the literature have found that reforms that directly reduce expected malpractice awards have the largest effect on malpractice pressure and physician behavior. <sup>6-8</sup>

We defined our 2 law variables as follows. If a state adopted any direct reform between 1986 and 2001, then we set the binary variable List= 1 for the year of adoption t and all years subsequent to t; L<sub>Isi</sub>=0 for all years before t. If, after adoption of reforms, a state repealed all its direct reforms between 1986 and 2001, then we reset the binary variable List=0 for the year of repeal t and all years subsequent to t; L<sub>Ist</sub>=1 for the year of adoption and all years after adoption but before t. For all other states,  $L_{ist}$ = 0 for all years. We defined L2st similarly for indirect reforms. L<sub>g</sub> was defined as the 2-element vector containing L<sub>1st</sub> and L<sub>2st</sub>.

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We began by estimating Poisson models of the following form:

Prob(Number of physicians<sub>st</sub> = 
$$N_{si}$$
) =  $\frac{e^{-\lambda_{si}} \lambda_{si}^{N_{si}}}{N_{si}!}$ 

where  $\ln(\lambda_{si}) = \alpha_s + \theta_i + \beta P_{si} + W_{si} \gamma +$  $R_{st}\rho + M_{st}\delta + L_{sl}\phi$ . Although we were unable to distinguish the effect of reforms adopted in 1985 or earlier from differences caused by other factors influencing either the level or growth of physician supply, we estimated different baseline time trends  $\theta_i$  for states adopting direct and indirect reforms before 1986 (which generally were adopted before 1980) and for nonadopting states to impose as few constraints as possible on the empirical model. Because it is impossible to consistently estimate the fixed effects in a nonlinear model of this form, we conditioned them out of the likelihood function according to the method described by Hausman et al.9 In this model,  $E(N_{st} | P_{st}, W_{st}, R_{st}, L_{st}) = \lambda_{st}$ , so  $dlnE(N_{si})/dL_{si}=\phi$ . In other words,  $\phi$ represents the approximate percentage change in the supply of physicians that results from tort reform. We calculated the SE of  $\phi$ , allowing the number of physicians to be correlated within a state over time; we assumed only that the number of physicians is independent across states. 10

We also estimated 3 sets of expanded Poisson models. The first set of models estimated separately the longterm and short-term effects of reforms. In these models, we denoted the existence of direct reforms by using 2 binary variables. If a state adopted any direct reform between 1986 and 2001, then we set the binary variable  $L_{1st}=1$ for the year of adoption t, t+1, and t+2;  $L_{1si}$ =0 for all years before t. We set the binary variable  $L_{2st}=1$  for all years after t+2;  $L_{2st}=0$  for all years through t+2. If, after adoption, a state repealed all its direct reforms between 1986 and 2001, then we reset the binary variables  $L_{1st}$  and  $L_{2st}=0$  for the year of repeal t and all years after t;  $L_{1st} = 1$  for the year of adoption and the 2 subsequent years but before t;  $L_{2sr}=1$  for all years after the second year after adoption but

before t. For all other states,  $L_{1st}$  and  $L_{2st}$ = 0 for all years. We defined  $L_{3st}$  and  $L_{4st}$  similarly for indirect reforms.  $L_{4t}$  was defined as the 4-element vector containing  $L_{1st}$ ,  $L_{2st}$ ,  $L_{3st}$ , and  $L_{4st}$ .

The second set of models allowed the effect of law reforms to vary in high vs low managed care environments. As discussed in previous work by one of us (D.P.K.), reductions in liability that reduce defensive practices in a conventional tort and insurance environment may be either more or less beneficial in an environment that is influenced by managed care or may even be socially harmful. In these models, we defined  $\ln(\lambda_{st}) = \alpha_s + \theta_t + \beta P_s + W_{st} \gamma + R_{st} \rho + M_{st} \delta + L_{st} \phi + M_{st} *L_{st} \phi$ , where  $\phi$  is the differential effect of reforms in high managed care environments.

The third set of models decomposed the effect of reforms into 2 parts: the part caused by the movement of existing physicians between states and the part caused by the entry of new and the retirement of existing physicians. Identifying how much of the net effect of reforms is due to moves vs entries and retirements is important because the welfare consequences to the country as a whole of aggregate changes in supply (through entries and retirements) are different from the consequences of reallocation of physicians across states. To do this, we defined a "moving" physician between year t and year t+1 as one who was in active practice in t and t+1 but in different states. We defined an "entering" physician as one who was in active practice in t+1 but not in t (including immigrating physicians); we defined a "retiring" physician as one who was in active practice in t but not in t+1 (including emigrating physicians).

We used data from 4 sources. First, we used data from the American Medical Association Physician MasterFile on the number of physicians involved in direct patient care. The Physician MasterFile represents the most comprehensive data available on physician supply for the years of our study. 12 Second, we used data on malpractice laws and state political characteristics from Kessler and McClellan, 5 updated through 2001.

Third, we used data on the number of residency programs and the number of residents per capita in each state for each year from 1985-2001 from the National Graduate Medical Education Census. Fourth, we used data on state managed care enrollment from InterStudy Publications. Enrollment rates per capita were calculated by dividing the number of enrollees (exclusive of preferred provider organization members and supplementary Medicare enrollees) by the population.

#### **RESULTS**

TABLE 2 previews our basic differencesin-differences analysis by reporting unadjusted 1985-2001 percentage changes in the number of physicians from states adopting and not adopting reforms during our study period. Column 5 of Table 2 presents the percentage change in physician supply in states with direct reforms only compared with nonadopting states; column 6 presents the change in supply in states with indirect reforms only compared with nonadopting states; and column 7 presents the change in supply in states with direct and indirect reforms compared with nonadopting states. Column 5 of the first row of Table 2 shows our basic result: physician supply increased more rapidly, by 8.2%, in states adopting direct reforms only vs no reforms.

Trends in physician supply differed by specialty. On an unadjusted basis, states with direct reforms only vs no reforms showed less-than-average differential increases in the supply of physicians in the 5 high-malpracticepremium specialties (with surgeons reporting no differential increase at all), although states with direct and indirect reforms showed greater-thanaverage differential increases in the supply of 2 of the 5 high-premium specialties, anesthesiology (12.3%) and radiology (11.1%). In contrast, overall physician supply increased 3.4% less rapidly in states with indirect reforms only.

Malpractice reform increased growth more in the supply of physicians with 20 or more years of experience (as mea-

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Table 2. Change in Physician Supply in States Adopting and Not Adopting Reforms, 1985-2001

		Change, %					
	No Reforms	Direct Reforms Only	Indirect Reforms Only	Direct + Indirect Reforms	Direct Only vs No Reforms	Indirect Only vs No Reforms	Direct + Indirect vs No Reform
All physicians All physicians	61.3	69.5	57.9	70.8	8.2	-3,4	9.6
Emergency medicine	118.0	125.3	98.3	116.0	7.3	-19.7	-2.0
Obstetrics/gynecology	46.8	48.4	39.8	49.1	1.6	-6.9	2.3
Anesthesiology	88.3	94.2	80.9	100.5	5.9	-7.4	12.3
Radiology	45.8	52.3	44.2	56.9	6.5	-1.6	11.1
Surgery	2.4	2.4	1.7	4.6	0.0	-0.7	2.2
Physicians with ≥20 years' experience All physicians	69.1	87.8	82.8	90.6	18.7	13.6	21.4
Emergency medicine	279.4	326.1	390.1	350.0	46.7	110.7	70.6
Obstetrics/gynecology	53.7	63.4	60.2	61.4	9.7	6.5	7.7
Anesthesiology	76.1	90.7	90.4	97.1	14.7	14.3	21.0
Radiology	79.8	91.0	89.9	99.8	11.3	10.1	20.0
Surgery	3.5	9.3	7.7	10.3	5.9	4.3	6.9
Physicians in nongroup practices All physicians	-10.2	-2.4	-7.6	-2.8	7.8	2.6	7.5
Emergency medicine	-1.7	1.1	-20.6	-4.3	2.7	-19.0	-2.7
Obstetrics/gynecology	-10.6	-3.3	-6.7	-4.2	7.3	3.9	6.4
Anesthesiology	-21.9	-16.4	-18.4	-18.3	5.5	3.5	3.6
Radiology	-39.6	-36.9	-38.2	-33.7	2.7	1.4	5.9
Surgery	-32.0	-28.5	-30.1	-29.2	3.6	2.0	2.8
States, No.	21	11	7	11			· · · · · · · · · · · · · · · · · · ·

Table 3. Effect of State Tort Reforms and Managed Care Enrollment on Physician Supply, 1985-2001

	Effect, % (SE)						
	Full Sample	Nongroup Only	<20 Years' Experience	≥20 Years' Experience			
Direct reforms	2.40 (0.24)	3.90 (0.36)	2.48 (0.32)	2.39 (0.35)			
Indirect reforms	-1.29 (0.24)	-1.15 (0.39)	-3.19 (0.33)	0.89 (0.35)			
Managed care enrollment	-0.13 (0.01)	0.00 (0.02)	-0.25 (0.01)	-0.03 (0.02)			

sured by years since completion of medical school) than growth in the supply of physicians overall. The supply of experienced physicians in states adopting direct reforms only increased by 87.8% from 1985-2001 compared to an increase in supply of 69.1% in nonadopting states, a difference of 18.7%. This result persisted for all of the highmalpractice-pressure specialties. The number of nongroup physicians shrank during the period. The unadjusted differences-in-differences effect of direct reforms on nongroup physicians was slightly smaller than the effect on all physicians.

These simple comparisons do not account for differences in trends in population, states' market and political characteristics, and differences in malpractice law that predate the start of our study period. We explore the importance of these factors in the regression analysis that follows.

TABLE 3 presents estimates of the effects of direct and indirect reforms on state/year counts of the number of physicians, holding all else constant, from our basic econometric model. All models underlying the results in Table 3 and subsequent tables are based on a sample of size 800 (50 states × 16 years; 1985-

2001, except 1990). States adopting direct reforms during the study period experienced statistically significantly greater increases in the supply of physicians than states that did not. In particular, physician supply in direct-reform states expanded by approximately 2.4% more during the study period than did supply in nonreform states, all else being held constant (SE, 0.24%). Supply in indirect reform states, in contrast, contracted by a smaller amount in absolute value (approximately 1.29%; SE, 0.24%). A 1% increase in managed care enrollment per capita led to a 0.13% decrease in physician supply (SE, 0.01%). The effect of direct reforms on the supply of nongroup physicians was substantially larger than the effect on all physicians (approximately 3.9% compared with 2.4%).

Does malpractice climate have a greater effect on nongroup physicians because they can transition out of nongroup status or because physicians who are not in groups are more likely to move or retire (and not be replaced by physi-

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cians entering practice)? To distinguish between these possibilities, we reestimated the model underlying Table 3 but limited the universe of physicians to those who were in the sample and in the same state for all of the study years, thereby excluding all moves, entries, and retirements. By using the number of nongroup physicians in every state/year as the dependent variable, we found that direct reforms increased growth in physician supply by a smaller amount, leading us to conclude that the differential responsiveness of the supply of nongroup physicians was the result of nongroup becoming group physicians in nonreform states (data not shown).

Table 3 reports 3 other key findings. First, direct reforms had a similar effect on the supply of less vs more experienced physicians. Second, the net effect of indirect reforms on physician supply masked 2 competing effects: a negative effect on the supply of less experienced physicians and a positive effect on the supply of more experienced physicians. Third, the effect of managed care is larger for less experienced physicians.

TABLE 4 presents estimates of the effects of reforms on the supply of nongroup physicians in 5 "high-risk" specialties. We restricted the analysis to nongroup physicians to isolate the effect

nonreform states (data not shown). nongroup physicians to isolate the effect **Table 4.** Effect of State Tort Reforms and Managed Care Enrollment on Nongroup Physician Supply, 1985-2001, for 5 High-Premium Specialties

11.	Effect, % (SE)							
	Emergency Medicine	Obstetrics/ Gynecology	Anesthesiology	Radiology	Surgery			
Direct reforms	11.48 (2.62)	2.32 (1.32)	5.13 (1.78)	4.14 (2.52)	2.01 (1.39)			
Indirect reforms	-3.59 (2.73)	-0.51 (1.43)	-1.86 (2.03)	0.55 (2.63)	-0.18 (1.49)			
Managed care enrollment	-0.89 (0.14)	-0.15 (0.07)	-0.22 (0.10)	-0.08 (0.13 <b>)</b>	-0.26 (0.07)			

**Table 5.** Long- vs Short-term Effect of State Tort Reforms and Managed Care Enrollment on Physician Supply, 1985-2001\*

		Effect, % (SE)						
	Full Sample	Nongroup Only	<20 Years' Experience	≥20 Years' Experience				
Direct reforms Short-term effect	-0.09 (0.27)	1.70 (0.43)	-0.83 (0.37)	0.82 (0.40)				
Long-term effect	3.32 (0.25)	4.45 (0.39)	3.45 (0.34)	3.27 (0.37)				
Indirect reforms Short-term effect	0.64 (0.28)	0.68 (0.44)	0.07 (0.39)	1.40 (0.41)				
Long-term effect	-2.11 (0.25)	-2.32 (0.42)	-4.64 (0.35)	0.77 (0.37)				
Managed care enrollment	-0.12 (0.01)	0.02 (0.02)	-0.23 (0.01)	-0.03 (0.02)				

<sup>\*</sup>Short-term effects are less than 3 years after adoption; long-term effects are 3 or more years after adoption.

**Table 6.** Effect of State Tort Reforms and Managed Care Enrollment on Physician Supply, 1985-2001, Allowing the Effect of Reforms to Vary in Different Managed Care Environments

	Effect, % (SE)						
	Fulli Sample	Nongroup Only	<20 Years' Experience	≥20 Years' Experience			
Direct reforms	-0.95 (0.32)	1.74 (0.51)	-2.35 (0.44)	0.83 (0.47)			
Indirect reforms	0.15 (0.37)	2.33 (0.61)	0.75 (0.51)	-0.73 (0.54)			
Managed care enrollment	0.05 (0.02)	0.23 (0.03)	0.05 (0.02)	0.08 (0.03)			
Reform × managed care enrollment interactions Direct reforms	0.17 (0.01)	0.06 (0.02)	0.23 (0.02)	0.11 (0.02)			
Indirect reforms	-0.16 (0.02)	-0.23 (0.03)	-0.35 (0.02)	0.06 (0.02)			

of specialty. The proportion of physicians employed in a group vs nongroup setting differs by specialty and may affect the incidence of malpractice pressure. Thus, differences by specialty in the effects of malpractice pressure on the supply of group and nongroup physicians together may represent a combination of the effect of specialty and differences by specialty in the proportion of physicians employed in a group setting. The point estimates of direct reforms for 3 of the 5 high-premium specialties exceeded the average effect of reforms for all nongroup physicians. For example, direct reforms led to increased growth in the supply of emergency medicine physicians of approximately 11.5%, almost 3 times the magnitude of the average nongroup effect of 3.9%. Effects for anesthesiology and radiology were also larger than the average effect, although the effect for radiology was statistically significant only at the 10% level (P = .10). The effect of direct reforms on the supply of surgeons was smaller than the average effect and statistically nonsignificant (P = .15).

TABLE 5 presents estimates of the long-run vs short-run effects of reforms and shows that reforms take time to reach their equilibrium impact. The magnitude of the effect of direct reforms long after their adoption is always greater than the magnitude of their effect soon after adoption, which is consistent with the estimates representing causal effects of law reforms rather than differences in trends in unobserved characteristics of states. For example, states adopting direct reforms experienced small and nonsignificant immediate changes in physician supply but approximately 3.3% greater growth in physician supply 3 or more years after adoption of reforms compared with states that did not. The group/nongroup and less experienced/more experienced effects of direct reforms followed the same pattern, with significantly greater magnitudes 3 or more years after adoption than within 2 years of adoption.

TABLE 6 presents estimates of the effect of reforms and managed care enrollment on physician supply, allow-

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**Table 7.** Effect of State Tort Reforms and Managed Care Enrollment on Physician Supply, 1985-2001, Decomposing Changes in Supply Into Retirements/Entries and Moves

***************************************		Effect, % (SE)					
	Re	Retirements/Entries Only			Moves Only		
	Full Sample	<20 Years' Experience	≥20 Years' Experience	Full Sample	<20 Years' Experience	≥20 Years' Experience	
Direct reforms	2.32 (0.24)	1.82 (0.33)	2.81 (0.35)	0.03 (0.25)	0.83 (0.34)	-0.77 (0.37)	
Indirect reforms	-2.61 (0.24)	-4.84 (0.33)	-0.01 (0.35)	1.50 (0.26)	1.96 (0.35)	1.03 (0.38)	
Managed care enrollment	0.03 (0.01)	0.00 (0.01)	0.02 (0.02)	-0.24 (0.01)	-0.38 (0.02)	-0.07 (0.02)	

ing the effect of reforms to vary in highand low-managed care environments. Table 6 shows that direct reforms had a statistically significantly greater effect on physician supply in high care vs low managed care states (P<.001). High levels of managed care either increase the level of malpractice pressure that physicians bear or increase the disutility of a given amount of malpractice pressure. The opposite was true of indirect reforms for physicians in aggregate and for less experienced physicians

TABLE 7 presents estimates of the effect of reforms and managed care enrollment on physician supply, decomposing changes in supply into 1 of 2 types: retirements or entries and moves. Table 7 shows that virtually all the effect of direct reforms was due to increased entry and decreased retirement of physicians in reforming states rather than the movement of existing physicians from nonreforming to reforming states. The positive effect of direct reforms on entry (ie, on less experienced physicians) was smaller in magnitude than the negative effect of direct reforms on retirements (ie, on more experienced physicians). The positive effect of indirect reforms on the supply of physicians through moves was counterbalanced by a substantial negative effect of indirect reforms on entry, which is consistent with the results in Table 3; indirect reforms are more highly valued by physicians who have been in practice compared with those who have not.

We estimated several alternative models (not included in the tables) to further investigate how malpractice

liability affects physician supply. First, we estimated a model that included a separate law variable for states that adopted both direct and indirect reforms. Adopting both direct and indirect reforms had a small (<0.01%) and statistically insignificant effect on supply (P = .99) over and above the independent effects. Second, we estimated a model that allowed the effect of caps on damages to differ from the effect of other direct reforms. Caps on damages have a statistically significantly larger effect than all other direct reforms (3.0% compared with 0.64%;  $\chi_1^2$  testing equality of effects=25.7). Third, we estimated models that allowed the effect of managed care to be nonlinear and that were based on a subset of the years in our full analysis. Although the estimated effect of direct reforms was robust to these specification changes, the estimated effects of indirect reforms and managed care were not.

#### COMMENT

In this study, we developed new empirical evidence on the relationship between malpractice climate and the supply of medical care. We compared trends in the supply of physicians in states that adopted and did not adopt law reforms limiting malpractice liability between 1985 and 2001. We found greater growth in physician supply in states that adopted reforms directly limiting liability than in states that did not. This basic result accords with other work published by Hellinger and Encinosa. 13 In our study, physician supply in directreform states expanded by 2.4% more

during the study period than did supply in nonreform states, controlling for fixed differences across states, population, market and political characteristics, and other differences in malpractice law. Direct reforms have a larger effect on supply 3 or more years after their adoption (3.3%) compared with 2 or fewer years after adoption (-0.01%).

Our estimates of the effect of malpractice climate on physician supply were consistent with previous research finding that physicians practice "defensive medicine," changes in practice based on fear of litigation that have little or no medical benefit for patients.5,11,13-16 Defensive medicine includes declining to supply care that has medical value to reduce the risk of malpractice liability. It can manifest itself both in across-the-board decisions by physicians to refrain from performing certain procedures or treating certain diseases and in case-by-case decisions not to treat particular patients. Avoidance behaviors of this sort have received significantly less academic attention than defensive medicine manifested as excessive testing or unnecessary procedures.

Malpractice climate is one of many determinants of the physician workforce, which accounts for its relatively modest impact in our study. Overall supply and the specialty and geographic distributions of physicians may be modified at several junctures: initial choice of career or specialty, retraining, relocation, and retirement. These decisions are influenced by various economic, experiential, and non-experiential factors, which them-

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selves are products of individual, community, and market characteristics, as well as government policies. 1,17-23 To put our estimates in context, Rizzo and Blumenthal<sup>24</sup> found that a 1% increase in physicians' wages led to a 0.2% to 0.3% increase in hours worked. Thus, the 3.3% increase in physician supply from direct malpractice reform is roughly equivalent to the increase in labor supply that would result from an 11% increase in wages (11 = 3.3/0.3).

Our results illuminate the mechanisms by which malpractice liability reduces growth in physician supply. Physician characteristics such as practice structure, specialty, payer mix, and stage of career mediate the relationship between malpractice climate and supply. In our study, the estimated effect of direct reforms was greater among physicians who practice in nongroup settings, which arose out of the movement of physicians into group settings in nonreform states. This is consistent with the lesser ability of smaller practices to spread liability insurance costs among many physicians, cushion premium volatility with high patient volume, or share risk with hospitals or other health care institutions.

Malpractice insurance is priced according to location and specialty rather than individual physician quality or loss experience. 25,26 All else being equal, one therefore would expect greater supply effects in specialties known to pay the highest malpractice premiums. Our point estimates show that reforms had a greater-than-average effect on the supply of physicians in 3 of 5 specialties paying the highest malpractice premiums. The effect of reforms on the supply of obstetrics and gynecology and general surgical practitioners were smaller than, although not statistically distinguishable from, the average effect.

In our study, direct reforms had a greater effect on retirements and entries to the profession than on the propensity of physicians to move between states. This finding supports the

argument that the supply effects of direct reforms will persist, at least to some degree, even if all states adopt reforms.

The positive effects of direct reforms on physician supply are greater in high- vs low managed care states. The disutility to physicians of managed care and malpractice pressure together may lead them to alter their careers more than either factor alone, although we cannot determine what aspect of the situation is the proverbial "last straw." Because managed care enrollment rose throughout the 1980s and 1990s, effects measured in high managed care states may be a better approximation of future consequences of malpractice reform than effects in low managed care states.

Malpractice reform affects the organization of physician services beyond simply increasing supply. We found that the differential responsiveness of the supply of nongroup physicians appears to be the result of nongroup becoming group physicians in nonreform states. Put another way, liability pressure is a contributing factor to the increasing corporatism of US medicine. We also found that indirect reforms increased supply growth of more experienced physicians but decreased supply growth of less experienced physicians. This change would occur if more experienced physicians valued indirect reforms more highly than their less experienced counterparts, and the decline in earnings or partnership opportunities associated with a greater supply of more experienced physicians in states with indirect reforms discouraged entry of new graduates. Further investigation of these effects is needed.

Policy makers should be cautious about the prescriptive implications of our analysis. The goals of our study were narrowly defined, and our approach has significant limitations. First, although we controlled for fixed differences between states, national trends that affected all states, and timevarying characteristics of states, we were unable to assess the impact of reforms

for states that adopted them before 1986. On one hand, if tort reform that originated in the malpractice crisis of the 1970s (eg, California's Medical Injury Compensation Reform Act) has persistent supply effects, then our study will understate differences between reform and nonreform states. On the other hand, supply gains from reforms adopted after the first wave may be more representative of potential future effects.

Second, we cannot exclude the possibility that the increase in physician supply we observed in states adopting reforms during our study period was simply a consequence of those states having more room for growth, because those states had fewer physicians at baseline. We controlled for differences in baseline levels of supply but not for differences in baseline growth rates in supply.

Third, endogeneity bias may have led us either to understate or overstate the effect of reforms. If decreases in physician supply lead states to adopt reforms, endogeneity bias would lead us to understate the effect of reforms. On the other hand, if increases in physician supply and the adoption of reforms are both caused by an unobserved factor, such as population preferences for litigation and medical services, endogeneity bias would lead us to overstate the effect of reforms.

Fourth, we estimated only the total effect of law reforms on physician supply. We did not separately identify the effect of malpractice pressure through which insurance premiums, the frequency of claims or awards, the amount of awards, and the nonfinancial impact of litigation would require significant additional econometric assumptions. <sup>27</sup> Because we did not make these assumptions, our results are more robust but less detailed.

Fifth, we estimated the effect of law reforms only on the number of physicians, not on the total hours worked by physicians. If hours worked per physician decrease with the number of physicians, then our estimates overstate the total effect of reforms.

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Sixth, we did not assess the impact of malpractice-induced supply changes on cost, quality, or access. Health policy analysts do not agree on the welfare implications of having more health care providers.28 Reform-induced expansions in supply could either decrease or increase health care costs: competition among health care providers might lead to lower prices and less wasteful care, or additional physicians might induce demand for their own services beyond the point at which they are medically necessary. Similarly, increased supply could lead to higher quality through competition but could also lead to lower quality if the physicians who exit as a result of malpractice pressure are disproportionately less skilled. Finally, access to health care depends on patient characteristics and local distributions of specialists, as well as on state-wide aggregate numbers of providers, and may differ between acute malpractice crises and noncrisis periods. In one of the few recent studies of this topic, Dubay et al<sup>29</sup> reported that malpractice pressure results in a small but significant reduction in access to prenatal care

Finally, our research does not address the fact that there are tradeoffs between the potential benefits of direct reforms, such as greater growth in physician supply, and their potential costs, such as reduced compensation for medical error.<sup>30</sup> Health policy scholars have proposed alternative ways of improving the overall performance of the malpractice system.<sup>27,31-33</sup> Empirical in-

vestigation of these approaches is an important topic for future research.

Author Contributions: Dr Kessler had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Kessler, Sage. Acquisition of data: Kessler.

Analysis and interpretation of data: Kessler, Sage, Becket

Drafting of the manuscript: Kessler, Sage. Critical revision of the manuscript for important intellectual content: Kessler, Sage, Becker.

Statistical analysis: Kessler, Becker. Obtained funding: Sage.

Administrative, technical, or material support: Kessler. Study supervision: Kessler.

Financial Disclosures: None reported.

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Role of the Sponson. The Pew Charitable Trusts had no role in the design or conduct of the study; analysis and interpretation of data; or preparation, review, or approval of the manuscript.

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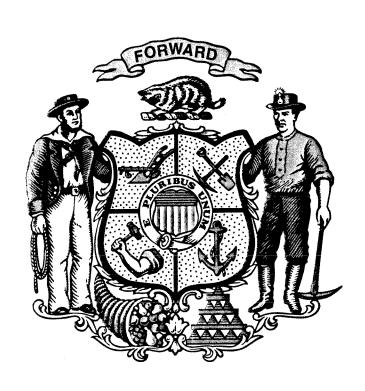
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# **UPDATE**

# For Immediate Release June 16, 2005

Contact:

Tim Roby

Fair Claims Coalition

608-251-1952

### Here We Go Again: Insurance Alliance Continues To Struggle with Truth

(Madison) – The debate over the Fox River cleanup and the Fair Claims Act has prompted more blatant distortions of the facts by the insurance industry that provided general liability coverage to paper company's decades ago.

Two years ago, the Oregon Legislature passed legislation similar to the Fair Claims Act and has reaped the benefits of expedited payouts from insurers, quicker cleanup of contaminated waterways and fewer legal challenges.

We need to set the record straight and respond to some of the distortions of truth by the Insurance Alliance and its spokesperson.

#### Alliance DISTORTION:

Wisconsin's bill and Oregon's law will re-write past contracts.

#### **FAIR CLAIMS TRUTH:**

The Fair Claims Act does not re-write contracts, nor did the Oregon law re-write contracts. Insurance policies held by the paper companies begin with the promise to pay all sums; the truth is, our legislation actually prevents the insurance industry from re-writing contracts through the courts.

#### Alliance DISTORTION:

The Fair Claims Act will not expedite the cleanup of the Fox River. The project is going ahead as planned.

#### **FAIR CLAIMS TRUTH:**

Fox River cleanup has started only because the *paper industry*, through voluntary consent decrees, agreed to fund the effort. Over \$130 million has been spent to date with no appreciable insurance money from the insurance industry prior to this issue being debated in the Legislature.

#### Alliance DISTORTION:

Cleanup has not begun in Oregon (Portland harbor).

#### **FAIR CLAIMS TRUTH:**

<u>Cleanup has begun</u>. The Superfund process will take several more years before the full remedy is selected and implemented. Prior to Oregon legislative adoption of the all sums rule, the Portland Port Authority could not even get the insurers to make full payment of initial defense costs under their policies. Once all sums was proposed and adopted, six of seven insurers settled with the Port Authority, which enabled them to enter into an order with the EPA to perform critical "early action" ahead of the overall Superfund process.

#### Alliance DISTORTION:

Seven legal challenges have been filed related to the Oregon law since it was passed in 2003.

#### **FAIR CLAIMS TRUTH:**

Several insurance coverage lawsuits were *already in progress* prior to the all sums legislation. In these cases, all now on appeal, the insurance companies have now added a claim challenging the law. We are not aware of any stand-alone lawsuit challenging the Oregon law.

#### Alliance DISTORTION:

No one has been required to pay a dime in Oregon because so many legal and constitutional questions from the law must be answered in court.

#### **FAIR CLAIMS TRUTH:**

Chris Hermann, attorney for the Portland Port Authority, said this at a hearing before the Assembly Insurance Committee: "Since the bill was introduced in the spring of 2003, 12 of our Oregon clients have had insurers accept tenders of defense and/or enter into settlements." Those insurance companies that have still refused to pay at other sites and have challenged the law have not yet been required by the courts to pay because those cases have not yet been decided.

#### Alliance DISTORTION:

The Oregon law shows us that if this law is not struck down, employers will grow jobs in other states that protect contracts.

#### FAIR CLAIMS TRUTH:

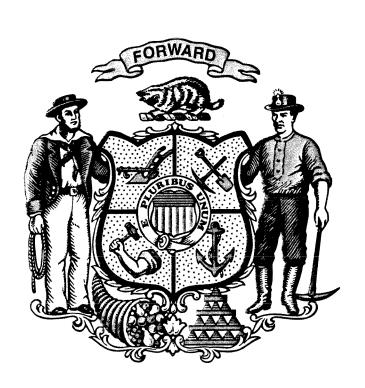
There is no evidence of any kind to support this in Oregon or in neighboring Washington, where the all sums rule was adopted in 1998. In fact, the \$30 million spent on the "early action" (cleanup) in Portland has resulted in additional jobs to undertake that effort.

#### Alliance DISTORTION:

This law is employing lots of lawyers in Oregon, but, not workers.

#### **FAIR CLAIMS TRUTH:**

There are fewer lawsuits, workers are on the job and cleanup has started.



# Effects of a Professional Liability Crisis on Residents' Practice Decisions

Michelle M. Mello, JD, PhD, and Carly N. Kelly, JD

OBJECTIVE: Pennsylvania, like many states, is in a professional liability crisis characterized by escalating cost and decreasing availability of liability insurance. Medical and surgical specialists have experienced especially large increases in insurance premiums. The objective of this study was to estimate the impact of liability concerns during a professional liability crisis on Pennsylvania residents' decisions regarding their future practice. It was hypothesized that liability concerns would negatively affect Pennsylvania residents' propensity to practice in the state following residency.

METHODS: Statewide mail surveys were completed in 2003 by 68 Pennsylvania residency program directors and 360 residents nearing the end of their training in anesthesiology, general surgery, emergency medicine, obstetrics and gynecology, orthopedics, and radiology residencies.

RESULTS: One third of residents in their final or next-to-last year of residency planned to leave Pennsylvania because of the lack of availability of affordable malpractice coverage. Although, in general, residents' geographic decisions are influenced by a range of factors, those who are about to leave Pennsylvania named malpractice costs as the primary reason 3 times more often than any other factor. Seventy-one percent of residency program directors reported a decrease in retention of residents in the state since the onset of the professional liability crisis. For some programs the decreases were very large.

CONCLUSION: An environment of mounting liability costs in Pennsylvania appears to have dissuaded substantial numbers of residents in high-risk specialties from locating their clinical practices in the state. The impact of decreased resident retention on the future availability of specialist services in high-cost states merits close monitoring. (Obstet Gynecol 2005;105:1287-95. © 2005 by The American College of Obstetricians and Gynecologists.)

LEVEL OF EVIDENCE: III

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The authors thank Tony Yang, Marin Levy, John Barkett, and Allison Nagy for their efforts in administering the surveys.

Large increases in medical professional liability insurance premiums and decreasing availability of insurance, widely referred to as a "professional liability crisis," have occurred in states across the country, deepening to extreme levels in several states, including Pennsylvania, West Virginia, Nevada, and Florida. 1,2 Pennsylvania has seen the departure of major insurers from the professional liability market, and premiums for specialist physicians have increased dramatically. Obstetriciangynecologists practicing in Philadelphia and insured by the largest of the remaining insurers paid \$134,335 in 2003, including their mandatory contribution to the state's secondary-layer insurance fund, compared with \$68,916 in 2000.3 Physician groups have lobbied strenuously for tort reform legislation, arguing that rising liability costs are contributing to critical shortages of physicians in high-risk specialties and threatening access to care. Emerging empirical evidence suggests that such claims may be somewhat overstated, but there have been demonstrable effects on specialist supply and availability of services in some areas (Mello MM, Studdert DM, DesRoches CM, Peugh J, Zapert K, Brennan TA, et al. Effects of a professional liability crisis on specialist supply and patient access to care. Unpublished manuscript, 2005).4 Many specialist physicians are restricting the scope of their practices to exclude high-risk services such as obstetrics and back surgery, and smaller numbers are discontinuing patient care altogether or relocating to states with lower malpractice costs (Mello et al, 2005).

Existing studies have focused on practicing physicians and have not examined how current medical residents in high-risk specialties may respond to the liability environment. If physicians-in-training, too, seek to avoid states with high liability costs, the professional liability crisis may have longer-range effects on the supply of specialist services in some states.

To investigate this issue, we administered surveys to residents and residency program directors in high-risk specialties in Pennsylvania concerning residents' career decisions. Our primary objective was to estimate the

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effect of the professional liability crisis on the willingness of residents in high-risk specialties to set up practice in Pennsylvania. We hypothesized that liability concerns would negatively affect residents' propensity to remain in the state. Secondary objectives were to elicit residents' perceptions of the liability environment in Pennsylvania and examine ways in which malpractice concerns may influence their views of patients and of the practice of medicine. The resident surveys were part of a larger Project on Medical Liability in Pennsylvania funded by the Pew Charitable Trusts and were inspired by findings from a series of key informant interviews<sup>5</sup> and a mail survey of practicing physicians, which suggested that Pennsylvania hospitals and physician practices were finding it increasingly difficult to recruit Pennsylvania trainees after residency (Mello et al, 2005).

#### MATERIALS AND METHODS

The sample frame consisted of every Pennsylvania residency program listed in the 2001-2002 Graduate Medical Education Directory in anesthesiology (n = 9), emergency medicine (n = 11), general surgery (n = 23), obstetrics and gynecology (n = 18), orthopedics (n = 10), and radiology (n = 15). These 6 specialties were selected based on findings from a series of 41 key informant interviews conducted with representatives of the Pennsylvania health care and insurance communities in 2002 for the purpose of determining which specialties were most affected by the current professional liability crisis.<sup>5</sup>

Following approval by the Harvard School of Public Health's institutional review board, we sought permission from each program director to survey residents who were currently in their last or next-to-last year of the residency program. We focused on those nearing the end of their training because they were more likely than more junior residents to have solidified their views about where they would practice after residency. This group also trained during a time of substantial deterioration in the malpractice environment in Pennsylvania, as measured by rising insurance premiums and malpractice awards.

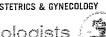
We elicited residents' views by using a 26-item structured questionnaire. Topic areas included demographic characteristics; factors influencing choice of residency program, practice location, and setting after residency and choice of clinical practice versus research or other career path; and perceptions of the professional liability environment in Pennsylvania. Attitudinal questions were formatted as 5-point Likert scales, and the questionnaire also included space for free-form comments. Approximately half of the nondemographic questions were

drawn from a larger survey of practicing physicians in Pennsylvania about the impact of professional liability concerns on their practice decisions (Mello et al, 2004).6 That instrument in the larger physician survey was validated through pretesting with 10 physicians who were subsequently debriefed in cognitive interviews focusing on question topics, question wording, and response category structuring. Throughout the questionnaire, questions and response categories were worded so as to avoid "leading" respondents to focus on liability costs more than other aspects of the practice environment. For example, questions asking about drivers of respondents' practice decisions listed liability costs as the fourth or fifth option among 6-8 possible responses.

Resident surveys were mailed in summer 2003 along with a cover letter containing the standard elements for obtaining informed consent. Responses were identified only by a numeric code. A second mailing was sent to nonrespondents after approximately 2 weeks. This was followed by an email reminder after 4 weeks (except where the residency program refused to provide residents' e-mail addresses), accompanied by an electronic version of the questionnaire.

Survey responses were coded, manually entered into an Excel spreadsheet, and double-checked for accuracy. The analytical plan called for descriptive statistics; comparison of resident retention at the time of the survey and 3-5 years prior; and subgroup comparisons on all outcome variables by specialty, residency location (urban/ suburban/rural), primary hospital type (academic/community), gender, personal ties to Pennsylvania, marital status, children, and perceptions of the burden of malpractice costs on practicing physicians in Pennsylvania. Population proportions were estimated with the Stata 8.2 statistical package (Stata Corporation, College Station, TX), incorporating appropriate corrections for clustered data. Subgroup comparisons were also performed using Stata's commands for complex survey data. For ordered categorical variables, an adjusted Wald test with an approximate F statistic was used. For other variables, the usual Pearson  $\chi^2$  statistic was transformed to an F statistic.

In summer 2003, each program director was asked to complete a separate program director survey, either personally or through a designee (eg, the program administrator). The purposes of the program director survey were 1) to obtain comparative data about resident retention and concerns in 2003 compared with the period before the onset of the professional liability crisis in Pennsylvania, and 2) to corroborate residents' own reports, in recognition of the fact that most surveys of medical residents do not garner high response rates.



The program director questionnaire contained 11 items, 5 of which were drawn from the resident survey. Additional questions elicited respondents' perceptions of the extent to which their residents were concerned about the Pennsylvania malpractice environment and the approximate percentage of their residents nearing the end of their training who planned to practice in Pennsylvania, now and 3–5 years earlier.

Surveys were mailed to consenting directors in May 2003 and collected over the following 3 months. Program directors also provided a list of the names, contact information, postgraduate year (PGY), and gender of each resident in the last or next-to-last year of the program. Survey data were entered and analyzed as described above.

#### **RESULTS**

Sixty-eight of the 86 programs that were approached participated in the survey. Four were no longer operating, 10 refused to participate, and a response could not be obtained from 4 programs after multiple follow-up contacts. Most programs that refused explained that they were too busy to participate.

The program director sample (n = 68) consisted of 9 anesthesiology directors, 10 emergency medicine directors, 15 obstetrics and gynecology directors, 8 orthopedics directors, 9 radiology directors, and 17 general surgery directors. The adjusted response rate for program directors, after exclusion of the 4 nonexistent programs, was 83%. Sixty percent of the responding directors worked in academic medical centers and 40% in community hospitals. Sixty-nine percent were located in urban areas, 16% in suburban areas, and 15% in rural

Of 771 surveys mailed to residents in the 68 participating programs, 360 responses were received and 41 surveys were undeliverable, yielding an adjusted response rate of 49% (unadjusted rate = 47%). Emergency medicine was the most heavily represented specialty in the sample (26%), followed by general surgery (19%), anesthesiology (17%), radiology (15%), orthopedics (12%), and obstetrics and gynecology (11%) (Table 1). Sixty-eight percent of respondents were male, 63% were married, and 32% had one or more children. Twenty-six percent grew up in Pennsylvania, and 34% attended medical school in the state. Seventy-one percent were training at an academic medical center, and 29% were at a community hospital.

Over three quarters (76.9%, 95% confidence interval [CI] 72.6-81.3%) of the residents who we surveyed planned to leave Pennsylvania, and 47.2% (95% CI

Table 1. Sample Characteristics\*

	Resid (n = 3		Progr Direc (n =	tors
	n	%	n	%
Specialty		······························		
Anesthesiology	60	17	9	13
Emergency medicine	94	26	10	15
General surgery	69	19	17	25
Obstetrics and gynecology	39	11	15	22
Orthopedics	44	12	8	12
Radiology	54	15	9	13
Age (y)	0.			
25 to 29	146	41		
30 to 34	155	43		
	36	10		
35 to 39	23	6		
≥ 40	43	U		
Gender	0.40	60		
Male	243	68		
Female	117	33		
Marital status				
Married	226	63		
Unmarried	133	37		
Number of children				
0	240	67		
1	55	15		
$\geq 2$	62	17		
Postgraduate year				
2 ~	25	7		
3	106	30		
4	147	41		
5	65	18		
6	16	5		
Residency location				
Urban	281	78	47	69
Suburban	37	10	11	16
Rural	42	12	10	15
Primary hospital type	255	71	40	60
Academic medical center	105	29	27	40
Community hospital	100	23	27	10
Ties to Pennsylvania	no	96		
Grew up in state	93	26		
Medical school in state	124	34		
Career plans	6.45	0.7		
Planning to see patients	347	97		
Full time	315	88		
Part time	32	9		
Planning to subspecialize	174	51		
Planning a fellowship	180	50		

<sup>\*</sup> Percentages may not sum to 100 because of rounding. Frequencies may not sum to n because of missing data.

41.7–52.8%) of these departing residents cited malpractice as the primary reason. Thus, overall, 1 in 3 specialist residents surveyed planned to leave the state specifically because of liability costs. There were significant differ-

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ences across specialties in the likelihood of leaving Pennsylvania (P=.013), with orthopedic surgeons most likely, and general surgeons least likely, to have plans to leave. Marital status, children, and gender were not significant predictors of plans to leave. Residents who had a personal history in Pennsylvania (either grew up in the state, attended a Pennsylvania medical school, or both) were significantly less likely to have plans to leave than those without a tie (70% versus 82%, P=.018). However, even among these residents, the proportion of those with plans to stay in Pennsylvania decreased from 57% at the start of their residency to 14% as they neared the end of their training.

Both residents and program directors perceived that retention of residents in Pennsylvania has decreased markedly since the onset of the professional liability crisis in 1999. About two thirds (64.7%, 95% CI 59.8–69.7%) of residents reported that they were less likely to remain in Pennsylvania now than they were when they started their residency, which, for about 70% of the sample, was in 1999 or 2000. Only 9.2% (95% CI 6.2–12.2%) of residents said that, before beginning their residency, they definitely planned not to practice in Pennsylvania. Another 26.8% (95% CI 22.2–31.4%) felt at that time that they were not likely to stay in Pennsylvania (Fig. 1). Today, the proportion with definite plans to leave is 46.1% (95% CI 41.0–51.2%), with another 30.8% (95% CI 26.0–35.6%) not likely to stay.

These results corroborate findings from the program director survey. Seventy-one percent of program directors reported a decrease in the percentage of residents planning to practice in Pennsylvania, compared with 3–5 years ago. Twenty-five percent reported that retention was stable, whereas 5% said it had increased. There was considerable variation among programs in both the absolute level of retention 3–5 years ago and the change in retention over time (Fig. 2). For some programs, the drops were severe: for example, 3 obstetrics and gynecology programs decreased from more than 70% retention to 20% or less. These differences were not significantly associated with geographic location (urban/suburban/rural) or hospital type (academic/community).

Both residents and program directors indicated that, in general, the availability of affordable malpractice coverage is an important, but not paramount, influence on residents' choices of practice location after residency. However, residents about to leave Pennsylvania cited malpractice costs as the main reason 3 times more often than any other factor. Program directors indicated that residents are much more concerned about professional

liability today than they were 3–5 years ago. Fifty-three percent of program directors said their current residents were very concerned, and 40% said residents were somewhat concerned, about the professional liability environment. In contrast, 2% said residents 3–5 years ago were very concerned (25% somewhat concerned).

Overall, 26.5% (95% CI 22.0-31.0%) of residents and 25% of program directors cited affordable malpractice insurance as 1 of the 2 factors most important to residents in choosing a geographic area in which to practice. Liability costs were outranked by quality of life concerns outside the professional environment (cited by 51.5%, 95% CI 46.4-56.6%, of residents and 48% of directors), proximity to family (41.6%, 95% CI 36.4-46.8%, and 48%, respectively), and physician salary levels (39.8%, 95% CI 34.8-44.8%, and 49%). Both groups ranked malpractice costs ahead of prestige or quality of hospitals, opportunities to pursue research, and health insurance reimbursement rates.

Decision making was similar for male and female residents, but there were significant differences in the importance that residents in different specialties placed on malpractice costs (P < .01). Obstetrics and gynecology and orthopedic residents were most likely (40% and 39%, respectively) to cite these costs as a strong influence on their choices of practice location. This finding was even more pronounced among residents who planned to leave Pennsylvánia. Over 65% of obstetrics and gynecology and orthopedic residents who planned to leave cited malpractice costs as the primary reason.

Although 30.1% (95% CI 25.4-34.8%) of residents were very likely (and 39.6%, 95% CI 34.6-44.6%, somewhat likely) to recommend training in Pennsylvania to a graduating medical student, only 1.7% (95% CI 0.4-3.0%) were very likely (and 11%, 95% CI 7.8-14.2%, somewhat likely) to recommend setting up practice in Pennsylvania. Over half (51.9%, 95% CI 47.5-56.3%) believed that professional liability insurance premiums were an "extreme burden" for Pennsylvania physicians in their specialty, another 41.7% (95% CI 37-46.4%) characterized them as a "major burden," 6.4% (95% CI 3.9-8.9%) thought they were a "minor burden," and none characterized them as "not at all a burden." Those who perceived premium burdens to be heaviest and those in the most costly specialties to insure (obstetrics and gynecology and orthopedics) were least likely to recommend practicing in Pennsylvania (P < .01 for both). Residents' free-text comments also revealed negative attitudes toward practicing in Pennsylvania's current environment (box: "Residents Speak About Malpractice and Their Career Choices").



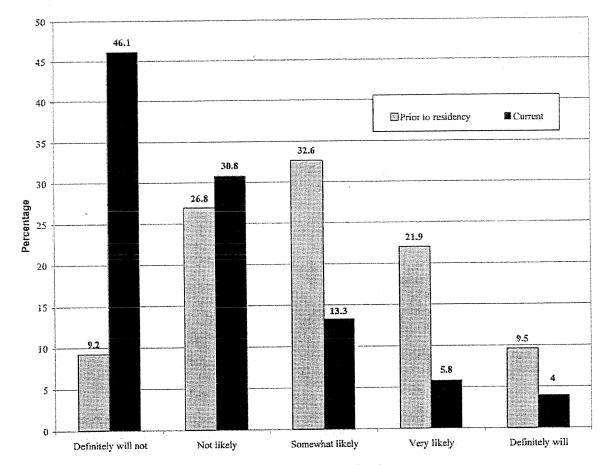


Fig. 1. Resident reports indicating likelihood of practicing in Pennsylvania. Mello. Effects of Professional Liability Crisis on Residents. Obstet Gynecol 2005.

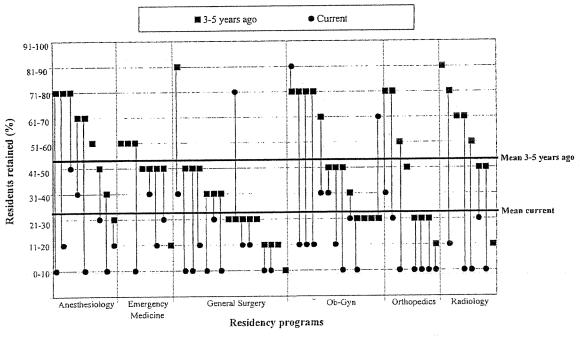


Fig. 2. Percentage of residents planning to practice in Pennsylvania from program director reports. Mello. Effects of Professional Liability Crisis on Residents. Obstet Gynecol 2005.

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#### RESIDENTS SPEAK ABOUT MALPRACTICE AND THEIR CAREER CHOICES\*

"I'm leaving Pennsylvania the second my residency is finished. Why in the world would anybody want to practice in this state?"

"If not for family ties in Pennsylvania, I would definitely be looking to work in other areas of the country."

"I am very concerned about not being able to refer patients to subspecialists in the state (neurosurgery, orthopedics). For the first time, I am considering leaving the state, and my family, to Maryland, Virginia, or a nearby state because of malpractice issues. Why stay here for lower salaries and higher risk?"

"Patients and politicians in this state will get the medicine they ask for: few, mediocre, foreign medical grads."

"Everything about Pennsylvania other than the state of malpractice and litigation would encourage me to stay and practice here. I like Pennsylvania but it's not worth it."

"In emergency medicine the individual practitioner does usually not pay his/her own premium, but it's usually paid by the employer. Therefore, the financial burden is indirect, but still very real (ie, lower salaries, benefits, etc)."

"The impact of professional liability makes me very nervous about practicing in Pennsylvania, but I love it here and will deal with what it brings."

"Although premium cost is a burden, the factor most dissuading myself and my wife, a PGY2 family medicine resident, from staying in Pennsylvania is the lottery mentality and proliferation of attorneys looking to blame doctors for inevitable outcomes."

"I have had the unfortunate experience of watching a once-excellent department crumble under the financial pressures of insurance. Our attending staff has diminished by about 75% in two years and the morale is awful."

"The psychological stress is immense and persistent. Viewing every patient as a potential lawsuit or an 'enemy in disguise' has become necessary, but seems contrary to why I became a doctor."

"It's not merely the affordability of malpractice insurance, but the prospect in Pennsylvania of spending more time in courts and depositions than I would in other states. The process of being sued is not pleasurable and I feel that I would experience it more often in Pennsylvania."

"I am trying to avoid states with high premiums because I need enough income to start saving for retirement and repaying my school loans of more than \$160,000."

"Having been a lifelong resident of Pennsylvania, it saddens me to have no interest in remaining here because of the current state of malpractice liability and sky-high premiums."

"I am disappointed that nothing is being done. I will not practice in Pennsylvania and will never treat a trial lawyer."

"I wish I had never come to Philadelphia, 'City of the Lawsuit.' I cannot believe I have dedicated my entire life to medicine just to be sued twice during my residency. I warn all students that I meet not to become a doctor, not to go into surgery, and above all, not to go to Philadelphia."

"Pennsylvania? Not a chance."

\* No positive comments were received.

Residents' responses suggest that, in addition to prompting many residents to set up practice in a lower-cost state, malpractice concerns may affect new physicians' practice styles. Forty-one and a half percent (95% CI 36.6-46.5%) of residents reported that, because of the cost of malpractice insurance coverage, they were at least somewhat likely to reduce or eliminate high-risk aspects of clinical practice (13.4%, 95% CI 9.8-17.0%, very likely and 5.3%, 95% CI 2.9-7.7%, definitely will). There were no significant differences in the likelihood of reducing scope of practice between residents who planned to leave Pennsylvania and those who planned to stay. Examples of specific practices residents planned to avoid include regional blocks on extremities, cardiac anesthesiology, spinal surgery, bariatric surgery, highrisk transplants, obstetrics (especially high-risk obstetrics), amniocentesis, trauma care, complex fracture



Table 2. Resident Reports: Impacts of Professional Liability Concerns on Practice\*

Table 2. Resident Reports: II	inpuesto en interest			Somewhat	
Because of Concerns About Malpractice Liability	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
I feel that I am less candid	8.4 (5.8–11.0)	24.9 (20.3-29.5)	19.3 (15.3-23.3)	22.7 (18.3-27.1)	24.6 (20.1–29.1)
with my patients I view every patient as a potential malpractice	38.1 (33.3–42.9)	42.6 (37.6–47.6)	9.0 (6.2–11.8)	6.4 (3.9-8.9)	3.9 (1.9-5.9)
lawsuit I am less eager to practice	30.6 (26.1-35.1)	36.8 (31.8-41.8)	14.0 (10.3–17.7)	10.7 (7.5–13.9)	7.9 (5.1–10.7)
medicine than I once was I regret choosing medicine as	5.9 (3.5-8.3)	21.6 (17.3-25.9)	18.0 (14.0-22.0)	21.6 (17.4–25.8)	32.9 (28.0-37.8)
my career					`

Data are expressed as % (95% confidence interval).

\* Rounded percentage of completed responses.

care, revision arthroplasties, mammography, and interventional radiology procedures.

Liability concerns also appear to affect residents' attitudes toward their patients and their ability to care for them (Table 2). Residents were nearly unanimous (98.3%, 95% CI 97.0-99.7%) in their belief that the malpractice system limits the ability of doctors in Pennsylvania to provide the highest quality of medical care, with 70.6% (95% CI 65.9-75.2%) reporting that it limits quality "a great deal." Of those surveyed, 80.7% (95% CI 76.6-84.7%) agreed that, because of malpractice liability, they viewed every patient as a potential malpractice lawsuit. One third (33.3%, 95% CI 28.4-38.2%) said that they were less candid with their patients because of concerns about malpractice liability. Because of these concerns, 67.4% (95% CI 62.6-72.2%) of residents reported that they were less eager to practice medicine than they had once been. The higher that residents perceived premiums in their specialty to be, the more their eagerness to practice was dampened (P < .01).

#### DISCUSSION

Our findings suggest that the malpractice environment will have substantial effects on the number of young physicians in high-risk specialties establishing practices in Pennsylvania in the near future. In the specialties we surveyed, one third of residents nearing the end of residency planned to leave Pennsylvania specifically because of the lack of affordable malpractice insurance. Although, in general, residents' practice location decisions are influenced by a variety of factors, malpractice costs are the primary driver for those who plan to leave Pennsylvania. Obstetrics and gynecology and orthopedic residents were especially influenced by rising malpractice costs, and malpractice concerns are influential even for residents with personal ties to Pennsylvania.

Our results further indicate that many residents, including those who stay in Pennsylvania, may limit the

scope of their clinical practice to lower their insurance costs and limit their liability risk. This could lead to a shortage of physicians willing to perform high-risk procedures or serve high-risk patients.

Our findings are corroborated by the results of a broader survey conducted in 2003 of 824 practicing Pennsylvania physicians in emergency medicine, general surgery, obstetrics and gynecology, neurosurgery, orthopedic surgery, and radiology (Mello et al, 2005).<sup>6</sup> In that survey, 85% of physicians whose practice or hospital had tried to recruit physicians in their specialty in the past 3 years reported difficulties attracting qualified candidates. Ninety percent of physicians who reported recruiting attempts said that candidates had voiced concern about the malpractice environment in Pennsylvania.

Aside from studies of residents' decisions to practice in rural areas, little prior work has examined the factors influencing U.S. residents' choices of practice location following residency (PubMed search on "physicians" and "career choice" or "professional practice location," in English language publication from 1985 to 2005). One study found that primary care physicians tend to move shorter distances than specialists to establish their first practice.7 Another found that some of factors predicting practice within the state of residency training for physicians who were 1-13 years postresidency were gender, medical school location, generalist practice, and involvement in academic medicine. Overall, 49% of Pennsylvania specialist trainees in that study were retained in state.8 Previous studies have identified decisions on the part of newly trained physicians to limit their scope of practice in response to liability concerns.9-12 Studies examining choice of specialty have found that medical students select their specialty based on a constellation of factors, including income expectations, expected malpractice costs, work hours, the predictability of work schedules and vacations, the opportunity to perform procedures, the opportunity for patient contact, and



personal fit. <sup>13–18</sup> Our findings suggest that, once they experience practice in a high-risk specialty, young physicians tend to place more importance on liability concerns than they did at the time of their initial choice of specialty.

A limitation of our study is the somewhat low response rate (49%) among residents despite 2 follow-up contacts. Response rates at this level or lower are common in resident surveys 19-23 because of the mobility residents, their demanding schedules, and the frequency of surveying. The similarity between the reports from residents and those from program directors, who responded at a much higher rate, imparts some confidence that resident responses were not biased. To investigate possible nonresponse bias, we compared participating and nonresponding residents on demographic information obtained from program directors. No significant differences were observed in  $\chi^2$  analyses of gender or program location (urban/suburban/rural) for the overall sample or for obstetrics and gynecology residents. Respondents were more likely than nonrespondents to be PGY6 and less likely to be PGY2.

We relied on program director estimates of historical retention of residents, which may be subject to recall bias. Finally, our study did not address the potential effect of the professional liability crisis on medical student interest in training in high-risk specialties such as obstetrics. The number of obstetrics and gynecology residents has remained essentially constant since the onset of the professional liability crisis in 1999–2000, but the percentage of obstetrics and gynecology residency slots filled by U.S. medical graduates has declined from 88.3% to 76.3%, which may indicate decreased interest, perhaps due to liability concerns. <sup>24,25</sup>

Our findings suggest that policy or market interventions may be necessary to avoid the flight of newly trained physicians from states with high liability costs. Pennsylvania, where liability costs have consistently been among the highest in the nation, has seen its percentage of physicians under the age of 35 drop from 15% in 1985 to less than 5% in 2000 (Foreman S. Unpublished data. Harrisburg, PA: Pennsylvania Medical Society Health Services Research Institute, 2003). This trend likely has been accelerated by developments in the liability environment since 2000.

If the liability climate improves in the very near future, resident retention may quickly revert to previous levels, but a more enduring crisis could lead to a decline in the supply of young specialists. The effect of this reduction on access to care would depend on the demand for specialist services, the supply of older specialists in the state, and the ease of attracting recruits (including foreign medical graduates) from other regions. Trends in these

factors in Pennsylvania are not reassuring (Foreman, 2003).<sup>4</sup>

Many of the departing residents we surveyed indicated that their decision stemmed from a simple income equation: high malpractice premiums reduced net income, possibly delaying the repayment of educational loans or a home purchase. The average educational debt among the 81% of graduating American medical students who carried loans in 2003 was \$109,457.26 Subsidizing insurance premiums or offering higher salaries is one way to improve the income equation. Tort reforms would reduce the economic risk associated with practicing in Pennsylvania but do not address residents' concern that practicing in a professional liability crisis state involves not only high costs but also fear of suit and distrust of patients. Overall, the outlook for improving retention of residents is not promising, and problems with supply of specialist services seem poised to deepen in Pennsylvania and elsewhere.

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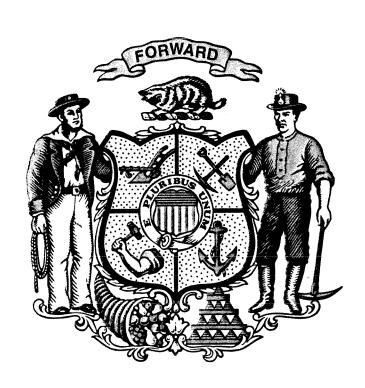
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#### The New York Times

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July 7, 2005

### Study Says Malpractice Payouts Aren't Rising

By JENNY ANDERSON

When Mike Kreidler was an optometrist in Olympia, Wash., he railed against trial lawyers. He believed that aggressive trial lawyers were the reason he faced rising insurance premiums.

Dr. Kreidler, now in his second term as Washington State's insurance commissioner, has changed his mind. He has decided that the problem is not the lawyers - although they have contributed - but also the insurance companies.

"I came full circle," he said. "I started out with a strong bias against trial lawyers and lawsuits, and now I see the trade-off and I have both sides, the trial lawyers and the insurance companies, mad at me."

The high price of medical malpractice insurance is a notoriously nebulous and highly politicized subject. Insurers and doctors contend that the insurance is more expensive because of a surge in jury awards and settlements. Consumer advocates and their political allies assert that insurers have raised rates because they can, arguing that insurers' claims have slowed significantly while premiums have shot up.

A study to be released today by the Center for Justice and Democracy, a consumer advocacy group in New York, may add fuel to that debate. The study, compiled from regulatory filings by insurers to state regulators, finds that net claims for medical malpractice paid by 15 leading insurance companies have remained flat over the last five years, while net premiums have surged 120 percent.

From 2000 to 2004, the increase in premiums collected by the leading 15 medical malpractice insurance companies was 21 times the increase in the claims they paid, according to the study. (The net totals in the study are calculated after accounting for reinsurance.)

Of the 15 companies examined, 9 are mutual insurers owned by their policyholders, 3 have publicly traded stock but are part of larger conglomerates and 3 are publicly traded and focus primarily on medical malpractice. The stock prices of those three companies have each risen more than 100 percent since May 2002.

"In recent years, medical malpractice hasn't been unprofitable but it's been phenomenally profitable," said Jay Angoff, the former state insurance commissioner of Missouri and a consultant on the study.

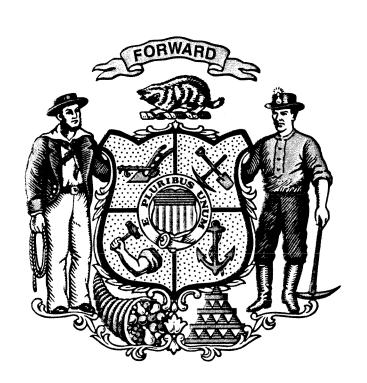
Insurance industry officials not only disagree with Mr. Angoff and the study, they discredit the methodology. They say that it is unfair to compare the premiums that insurance companies charge with claims paid, because it often takes 8 to 10 years for the claims to materialize, so companies have to set aside extra reserves.

"They have the potential to alter the debate fundamentally from seeming to cast the rapacious personal injury lawyers as the complete culprits and the insurers as innocent bystanders with doctors as victims to the insurers as equally responsible, if not more so," Mr. Blumenthal said.

Dr. Kreidler of Washington State is also not convinced that runaway juries are the sole cause for large rate increases. "Focusing exclusively on capping noneconomic damages will have a marginal effect on premiums and it will not have a pronounced dramatic impact," he said. "I think we should be doing something to make the tort system cheaper and making medicine safer."

Some insurance executives agree. "Malpractice insurance has changed how medicine is practiced," said William R. Berkley, chairman and chief executive of the W. R. Berkley Corporation, which underwrites particularly risky malpractice areas. "Part of it is good for patients; doctors are more careful. The problem is the cost."

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# MAJOR NEW REPORT SHOWS MEDICAL MALPRACTICE CLAIMS COSTS DO NOT JUSTIFY PREMIUMS

## SECOND STUDY RELEASED THIS MONTH CONFIRMING THAT DOCTORS ARE BEING PRICE-GOUGED

NEW YORK -- A new report released today by Americans for Insurance Reform, *Measured Costs*, finds that insurance companies have been raising doctors' premiums even though expenses related to claims have risen slowly, near medical inflation. The release of this report comes on the heels of the another study co-released this month by a coalition of national consumer organizations, *Falling Claims and Rising Premiums in the Medical Malpractice Insurance Industry*, that reaches similar conclusions. That study, reported in the July 7, 2005, edition of the *New York Times*, sparked two state attorneys general and a state insurance commissioner to explicitly challenge the insurance industry's excessive rate hikes for doctors.

Both studies support the conclusion that the reasons for the dramatic premium increases for doctors cannot be found in any sort of lawsuit "explosion" but must be found elsewhere – the business and accounting practices of the insurance industry. The "tort reform" remedy pushed by the insurance and medical lobbies is failing to do anything to help doctors with their insurance problems.

AIR's report, *Measured Costs*, is by actuary J. Robert Hunter, Director of Insurance for the Consumer Federation of America (CFA), former Commissioner of Insurance for the State of Texas, and former Federal Insurance Administrator under Presidents Carter and Ford. Hunter is also a co-founder of AIR.

According to Hunter, "The change in medical malpractice loss costs over the last 10 years shows the same pattern as paid losses, year after year rising near the level of medical inflation. There is no justification for the sudden spike in rates that American physicians have endured, other than the lack of competition that occurs during the insurance industry's periodic hard market episodes."

Joanne Doroshow, Executive Director of the Center for Justice & Democracy and AIR co-founder, said, "For years, insurance companies have argued that our civil justice system is responsible for unaffordable liability insurance for doctors. They have convinced lawmakers around the country to enact legislation that makes it nearly impossible for many seriously injured



## **MEASURED COSTS**

#### July 2005

Analyzing insurance pure premium<sup>1</sup> or loss costs,<sup>2</sup> is the most accurate way to determine the specific impact of the legal system on insurance rates. It is the one component of the rate that should be affected by verdicts, settlements, payouts, or so-called "tort reform," which limits these.

The most comprehensive and reliable database for determining insurance pure premium or loss costs, is that used by the Insurance Services Office (ISO). ISO makes filings with state insurance departments on behalf of the insurance companies using their services. ISO develops pure premiums for the insurers by taking the historic loss and loss adjustment expense information, including both actual payments and estimates of future payouts, and trending that information into the future using trend factors to reflect anticipated inflation and other changes. The results are changes in the levels of pure premium charges approved by the state insurance departments, which then are used by many insurance companies in their pricing models. The ISO publishes the percentage changes in loss costs in circulars sent to chief executive officers of the insurance companies that subscribe to their services.

A review of the changes in loss cost levels reveals that over the last five years, while doctors' malpractice insurance premiums skyrocketed, insurance companies' claims-related costs ("loss costs" and "loss adjustment expenses") rose only 4 percent per year – a slightly slower rise than during the mid- to late-90s when premiums rose slowly if at all.

Despite the rhetoric and lobbying by the insurance industry in their push for "tort reform," they have been raising doctors' premiums even though expenses related to claims have

<sup>&</sup>lt;sup>1</sup> "Pure premium" is a term used interchangeably with "loss costs." It is the part of the premium used to pay claims and the cost of adjusting and settling claims, including adjuster and legal expenses. See footnote 2 for a full definition of this term.

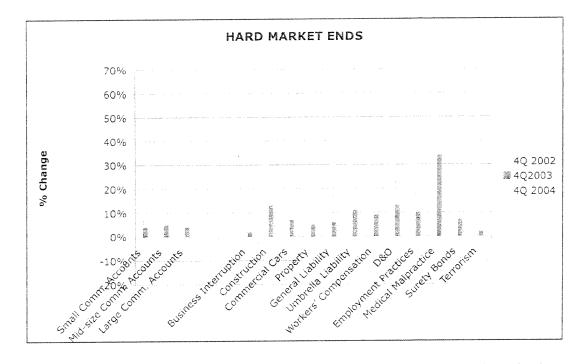
<sup>&</sup>lt;sup>2</sup> "Loss cost" is the term for the portion of each premium dollar taken in, that insurance companies use to pay for claims and for the adjustment of claims. Insurers use other parts of the premium dollar to pay for: their profit, commissions, other acquisition expenses, general expenses and taxes. Loss costs represent the largest part of the premium dollar for most lines of insurance. Loss costs include both paid and outstanding claims (reserves are included through an actuarial process known as "loss development") but also include trends into the future since rates based on ISO loss costs are for a future period. Thus, loss costs include ISO's adjustments to make sure that everything is included in the price, even such factors as future inflation.

<sup>&</sup>lt;sup>3</sup> "Loss adjustment expenses" are the cost of adjusting and settling claims, including adjuster and legal expenses and overhead costs associated with these expenses.

**Massachusetts** (cap with exceptions): "[T]he state's largest malpractice insurer said it will not raise doctors' premiums..."

Illinois (no cap): "ISMIE Mutual Insurance Company said that for the first time since 1999, rates won't increase for the policy year beginning July 1."

The following chart shows the soft market's arrival across all lines of commercial insurance:



This soft market will continue for about a decade (historically the soft market lasts between eight and 14 years) if the usual cycle time period occurs.

As in the past, the liability insurance crisis has been driven by the insurance underwriting cycle and not a tort cost explosion as many insurance companies and others claim. The "tort reform" remedy pushed by these advocates is failing to do anything to help doctors. As the findings of this report confirm, legal system restrictions are based upon a false predicate. "Tort reforms" do not produce lower insurance costs or rates.

And indeed, this is precisely what insurers have always known. In a 2004 filing to the Texas Department of Insurance, GE Medical Protective revealed that the state's new non-economic damages cap would be responsible for no more than a 1 percent drop in losses. The following quotes from insurance industry insiders also confirm this fact:

<sup>&</sup>lt;sup>7</sup> Liz Kowalczyk, "Malpractice insurer says it won't raise rates," Boston Globe, April 5, 2005.

<sup>5</sup> Jim Ritter, "Insurer holds line on malpractice policy rates," Chicago Sun-Times, April 7, 2005.

The GE Medical Protective filing can be found at: http://www.consumerwatchdog.org/insurance/rp/rp004689.pdf.

ISO has the largest database of audited, unit transaction data of any entity in the United States. "Unit transaction" means that the data are generated each time a transaction occurs (such as a policy being bought or a claim filed or paid). This allows for a paper trail back to actual records if ISO audits determine that an insurer is filing "bad" data. ISO audits these data and requests corrections as necessary based upon that review. ISO data therefore represent the most reliable and largest database for determining trends in insurance costs.

This study was done under the direction of actuary J. Robert Hunter (Director of Insurance for the Consumer Federation of America, and former Federal Insurance Administrator and Texas Insurance Commissioner). Mr. Hunter purchased from ISO the Chief Executive Circular Letters showing the state-by-state advisory loss cost level activity for the years 1995 through 2004. The ISO Chief Executive Circular Letters show, for each line of insurance for which ISO performs statistical and actuarial analysis, the premium changes recommended by ISO to its insurance company members, subscribers and other customers, after filing and action by the state insurance regulators.

"Loss costs" and "loss adjustment expenses" calculated by the ISO are an accurate database that can be used to examine when the impact on insurance rates of all insurance company payouts and reserves, including jury verdicts "Loss cost" is the amount that insurance companies use to pay for claims and for the adjustment of claims. "Loss adjustment expenses," include such things as claims adjuster expenses, defense attorneys' fees and other legal costs. Insurers use other parts of the premium dollar to pay for their profit, commissions, other acquisition expenses, general expenses and taxes. Loss costs represent the largest part of the premium dollar for most lines of insurance. Analyzing loss costs and loss adjustment expenses is the most accurate way to determine the specific impact of claims, payouts, jury verdicts and the legal system on insurance rates. Investment income is not a factor in these calculations. "Loss costs" or "loss adjustment expenses" include the only components of the rate that should be affected by payouts, tort costs or "tort reform."

From these ISO Circular Letters, a 10-year (1995 through 2004) database was constructed for the Physicians', Surgeons' and Dentists' (PS&D) Professional Liability line of insurance. The database shows the year-by-year change ISO filed with each state. For example, the data for a state might show that loss costs went up by 5.4 percent in a specific year. We recorded this change for each year from 1995 to 2004 for each state. Ultimately we combined the changes to obtain the total change for the entire period 1995 to 2004, and for 2000 to 2004. <sup>10</sup>

In order to measure the impact on insurance costs of tort law limits, we placed the states into two Categories, based on the following criteria:

We evaluated the major medical malpractice-related tort law limits enacted by state legislatures or by ballot initiative in medical malpractice cases. Decisions as to what constituted a "major tort law limit" were based on materials compiled by the American Tort Reform

<sup>&</sup>lt;sup>10</sup> We did this by adding the change for each year to unity (e.g. 5.4 percent added to unity create a factor of 1.054 for that year. We multiplied the changes together to get a factor for the entire 1995 to 2004 period and subtracted unity to obtain the 10-year percentage change.

"Tort reforms" have not affected loss costs. Over the last five years, while insurance companies dramatically raised doctors' premiums during the "hard market," those insurers' loss costs rose slowly across the country. Between 2000 and 2004, states with fewer limits on tort law saw an average annual increase in medical malpractice loss costs of 3.8 percent, while those with more limits saw a slightly larger average increase of 4.8 percent.

Looking back over a decade shows the same trend: "tort reforms" did not make a difference. Loss costs rose slowly. States with fewer tort limits saw a 10-year average increase in medical malpractice loss costs of 5.0 percent and states with more limits saw a similar 10-year average increase in medical malpractice loss costs of 4.5 percent.

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STATE	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Years	Years
Category 1					001	20/	00/	00/	0.0/	0.07	1 0 00/	0.00
Alaska	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%	0.0%
Calif.	na	na	na	na	na	-1%	3%	17%	2%	1%	na	4.49
Colo.	8%	16%	0%	0%	12%	3%	0%	-3%	-1%	-2%	3.3%	-0.69
Conn.	-15%	0%	10%	. 14%	8%	6%	9%	12%	12%	8%	6.4%	9.4%
Florida	0%	0%	0%	19%	-19%	12%	8%	7%	7%	0%	3.4%	6.8%
Idaho	0%	0%	7%	0%	0%	7%	6%	12%	23%	25%	8.0%	14.6%
Illinois	15%	22%	-3%	0%	-16%	0%	-10%	27%	5%	25%	6.5%	9.4%
Indiana	15%	50%	0%	30%	-15%	-1%	-14%	-4%	-12%	0%	4.9%	-6.2%
lowa	0%	0%	0%	14%	0%	7%	12%	7%	10%	11%	6.1%	9.4%
Louisiana	0%	29%	0%	0%	0%	16%	0%	-1%	8%	11%	6.3%	6.8%
Maine	0%	0%	0%	9%	0%	8%	0%	2%	0%	0%	1.9%	2.0%
Mich.	-11%	-10%	0%	18%	16%	0%	7%	-6%	-5%	5%	1.4%	0.2%
Mo.	56%	20%	-12%	-13%	-6%	0%	-17%	-9%	13%	25%	5.7%	2.4%
Mt.	-10%	0%	0%	20%	10%	13%	14%	19%	12%	24%	10.2%	16.4%
Neb.	0%	10%	10%	6%	0%	0%	-8%	0%	12%	13%	4.3%	3.4%
Nevada	0%	0%	25%	0%	23%	25%	20%	20%	25%	0%	13.8%	18.0%
N.J.	0%	15%	0%	0%	0%	-11%	-11%	-10%	5%	9%	-0.3%	-3.6%
N.Y.	na	na	na	na	na	na	na	na	na	na	na	na
N.D.	0%	0%	-1%	0%	2%	0%	0%	0%	2%	0%	0.3%	0.4%
Ohio	14%	15%	-24%	0%	0%	-3%	0%	16%	3%	12%	3.3%	5.6%
Oregon .	0%	-15%	0%	0%	0%	25%	29%	0%	2%	0%	4.1%	11.2%
S.D.	0%	0%	1%	9%	0%	7%	-4%	-1%	-2%	0%	1.0%	0.0%
Texas	na	na	na	na	na	na	na	na na	na	na	na	na
Utah	0%	0%	0%	48%	19%	16%	8%	0%	4%	0%	9.5%	5.6%
Wash.	0%	0%	0%	4%	0%	12%	0%	4%	3%	11%	3.4%	6.0%
Wisc.	0%	30%	0%	0%	0%	-5%	-12%	-5%	-1%	-3%	0.4%	-5.3%
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Ala.	15%	0%	0%	0%	0%	0%	0%	12%	-1%	0%	2.6%	2.2%
Arizona	0%	0%	16%	28%	13%	12%	14%	0%	3%	9%	9.5%	7.6%
Ark.	19%	10%	0%	17%	0%	15%	-7%	2%	7%	6%	6.9%	4.6%
D.C.	0%	-10%	25%	10%	0%	19%	0%	0%	10%	0%	5.4%	5.8%
Dela.	14%	0%	0%	0%	-4%	-7%	-10%	-6%	7%	6%	0.0%	-2.0%
Ga.	0%	0%	9%	19%	0%	1%	1%	0%	0%	10%	4.0%	2.4%
Hawaii	na	na	na	na	na	na	na	na	na	na	na	na
Kansas	0%	0%	25%	25%	23%	-15%	-19%	-10%	3%	7%	3.9%	-6.8%
Ky.	61%	0%	7%	0%	-4%	0%	-22%	-3%	-7%	4%	3.6%	-5.6%
Md.	0%	30%	0%	17%	-11%	-9%	-12%	0%	8%	12%	3.5%	-0.2%
Mass.	na	na	na	na	na	na	na	na ,	na	na	па	na
Minn.	0%	11%	-9%	0%	0%	3%	0%	-7%	-6%	6%	-0.2%	-0.8%
Miss.	25%	0%	0%	23%	9%	8%	0%	13%	18%	22%	11.8%	12.2%
	-10%		w / v									· / U

#### APPENDIX A

# MEDICAL MALPRACTICE TORT RESTRICTIONS ENACTED THROUGH 2004

#### Alabama

87: med mal cap, noneconomic (but declared unconstitutional in 91)

87: med mal cap, total damages (but declared unconstitutional in 95)

87: punitive cap (but declared unconstitutional in 93)

87: collateral source (declared unconstitutional in part in 96, but then overruled in 2000)

99: punitive cap

#### Alaska

86: cap, noneconomic

86: joint and several liability

86: collateral source rule

88: joint and several liability (ballot initiative)

97: cap, noneconomic

97: punitive cap

97: prejudgment interest

#### Arizona

Pre-1985: med mal collateral source

87: joint and several

89: med mal structured settlements (but declared unconstitutional in 94)

#### Arkansas

Pre-1985: medical malpractice structured settlements

03: punitive cap

03: joint and several liability

#### California

Pre-1985: med mal cap, noneconomic; med mal collateral source; med mal contingency fees;

med mal structured settlements

86: joint and several liability (ballot initiative)

#### Colorado

86: cap, noneconomic

86: joint and several liability

86: punitive cap

86: collateral source

88: med mal cap, non economic and all damages

88: med mal statute of repose

88: med mal structured settlements

92: med mal collateral source

#### Illinois

Pre-1985: med mal collateral source

85: medical malpractice structured settlements

85: med mal contingency fees

95: cap, noneconomic (but declared unconstitutional in 97)

95: joint and several liability (but declared unconstitutional in 97)

95: punitive cap (but declared unconstitutional in 97)

#### Indiana

Pre-1985: joint and several liability

86: collateral source

93: med mal cap, all damages

93: med mal contingency fee

95: punitive cap

#### Iowa

Pre-1985: joint and several liability; med mal collateral source

86: structured settlements

87: collateral source

87: prejudgment interest

87: structured settlements

97: joint and several liability

97: prejudgment interest

#### Kansas

85: med mal punitive cap (but expired in 88)

86: med mal cap (but declared unconstitutional in 88)

86: med mal structured settlements (but declared unconstitutional in 88)

87: cap, noneconomic

87: punitive cap

88: cap, noneconomic

88: collateral source (but declared unconstitutional in 93)

#### Kentucky

88: joint and several liability (but codified common law rule)

88: collateral source (but declared unconstitutional in 95)

#### Louisiana

Pre-1985: med mal cap; med mal structured settlements (Patients Comp. fund); joint and several liability

87: joint and several liability

87: prejudgment interest

96: joint and several liability

03: med mal cap, noneconomic, for cases against nursing homes

#### Maine

85: med mal structured settlements

- 87: collateral source
- 95: med mal cap, noneconomic
- 95: med mal structured settlements
- 97: joint and several liability
- 03: punitive cap

#### Nebraska

Pre-1985: collateral source

Pre-1985: med mal cap, all damages (cap increased in 92, 03)

86: prejudgment interest (but improved prior standard)

92: joint and several liability (but improved prior standard)

#### Nevada

Pre-1985: med mal collateral source

87: joint and several liability

89: punitive cap

02: med mal cap, noneconomic

02: joint and several liability

04: med mal cap, noneconomic (initiative)

04: joint and several liability (initiative)

04: structured settlements (initiative)

#### New Hampshire

86: cap, noneconomic (but declared unconstitutional in 91)

86: punitive damages abolished

89: joint and several liability

95: prejudgment interest

01: prejudgment interest

#### New Jersey

Pre-1985: contingency fees

87: joint and several liability

87: collateral source

95: punitive cap

95: joint and several liability

#### New Mexico

87: joint and several liability (but codified common law)

92: med mal structured settlement

92: med mal cap (except punitive damages)

#### New York

86: joint and several liability

86: collateral source

86: structured settlements

86: med mal contingency fees

03: structured settlements

02: joint and several liability

02: collateral source

02: structured settlements

#### Rhode Island

86: med mal collateral source 87: prejudgment interest

#### South Carolina

Pre-1985: med mal structured settlements (Patient Comp. Fund with annual cap)

#### South Dakota

Pre-1985: med mal collateral source Pre-1985: med mal cap, noneconomic

86: med mal cap, economic (but declared unconstitutional 96)

86: med mal structured settlements

87: joint and several liability

#### Tennessee

Pre-1985: med mal collateral source

#### Texas

87: med mal cap (but declared unconstitutional in 88, although allowed for wrongful death in 90)

87: joint and several liability

87: punitive cap

87: prejudgment interest

95: joint and several liability

95: punitive cap

03: med mal cap, noneconomic

03: joint and several liability

03: prejudgment interest

#### Utah

85: med mal collateral source

86: med mal cap, noneconomic

86: joint and several liability

86: med mal structured settlements

99: joint and several liability

#### Vermont:

Pre-85: joint and several liability

#### Virginia

Pre-1985: med mal cap (although cap raised in 83 and 99)

87: med mal (children injured at birth, no right to sue, no noneconomic or punitive damages)

87: punitive cap

#### APPENDIX B

#### GLOSSARY OF COMMON "TORT REFORMS"

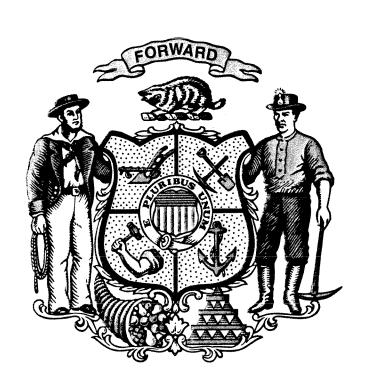
Collateral Source Rule – The collateral source rule prevents a wrongdoer from reducing its financial responsibility for the injuries it causes by the amount an injured party receives (or could later receive) from outside sources. Payments from outside sources means those unrelated to the wrongdoer, like health or disability insurance, for which the injured party has already paid premiums or taxes. The rule also prevents juries from learning about such collateral payments, so as not to unfairly influence the verdict. States that have modified this rule have either completely repealed it, mandating that payments received from health insurance, social security or other sources be used to reduce the wrongdoer's liability; or, they allow juries to hear during trial about collateral payments.

Caps (on Damages) – A damages cap is an arbitrary ceiling on the amount an injured party can receive in compensation by a judge or jury, irrespective of what the evidence presented at a trial proves compensation should be. A cap is usually defined in a statute by a dollar figure (\$250,000, \$500,000, etc.). Caps usurp the authority of juries and judges, who listen to the evidence in a case to decide compensation based on each specific fact situation. Several states have declared caps unconstitutional.

Contingency Fees -- Under a contingency fee arrangement, a lawyer agrees to take a case on behalf of an injured client without obtaining any money up front from the client. This is a risk, because if the case is lost, the lawyer is paid nothing. In return, the lawyer is entitled to a percentage of the amount of money collected – usually one-third – if the case is successful. This system provides injured consumers who could not otherwise afford legal representation with access to the courts. Typically, states limit contingency fees by capping them: sometimes well below one-third, sometimes along a sliding scale so fee percentages decrease as judgments increases. The principal impact of contingency fee limits is to make it less likely attorneys can afford to risk bringing many cases, particularly the more costly and complex ones, providing practical immunity for many wrongdoers.

Joint and Several Liability – The doctrine of joint and several liability is a fairness rule, developed over centuries to protect injured consumers. It applies when more than one defendant is found *fully responsible* for causing an injury (not 1 percent or 10 percent responsible, as is commonly misstated). If one wrongdoer is insolvent or cannot pay their share, the other fully-responsible wrongdoers must pick up the tab, to make sure the innocent victim is fully compensated.

Non-economic Damages – Non-economic damages compensate injured consumers for intangible but real injuries, like infertility, permanent disability, disfigurement, pain and suffering, loss of a limb or other physical impairment. Limits on non-economic damages can have a disproportionate



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Monday

October 2005

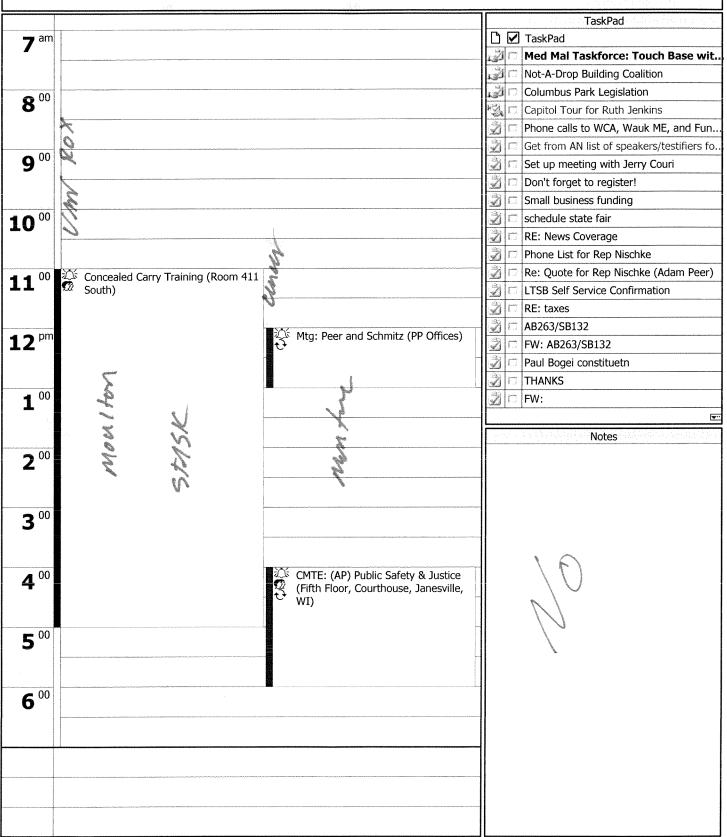
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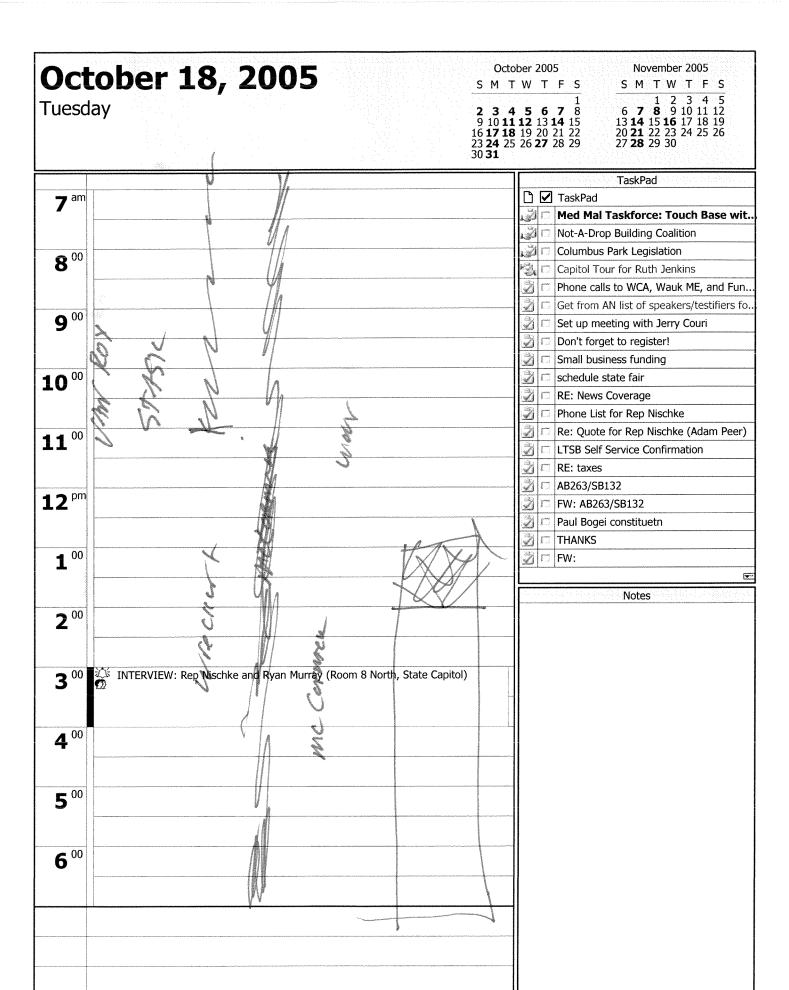
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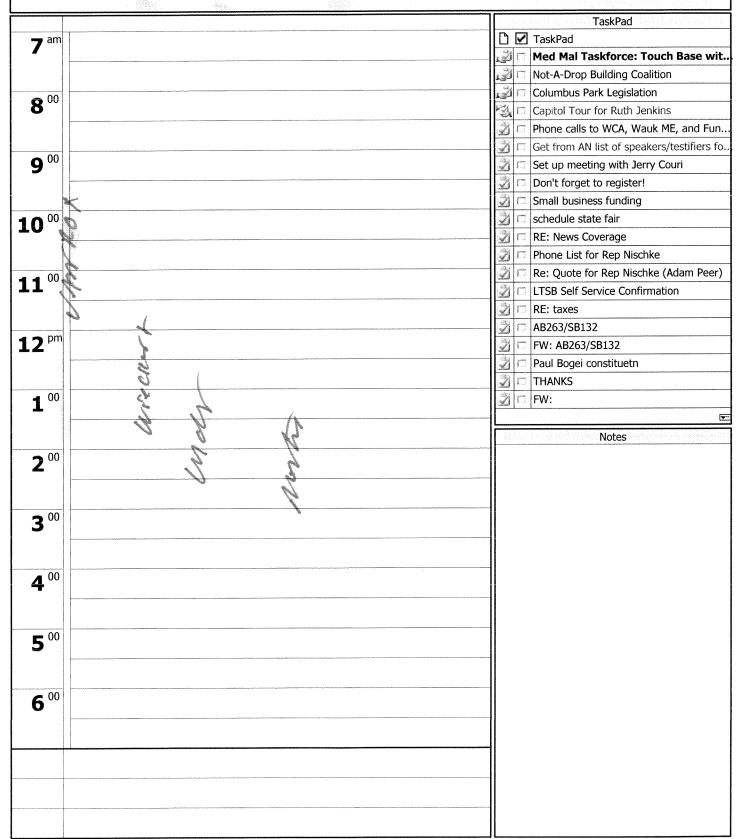
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9 00	Set up meeting with Jerry Couri
	Don't forget to register!
<b>10</b> 00	schedule state fair
TO	RE: News Coverage
00	Re: Quote for Rep Nischke (Adam Peer)
<b>11</b> 00	LTSB Self Service Confirmation
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